

## ABSTRACT

An excitation vector generator is provided for generating an excitation vector. The excitation vector includes a pulse vector generator that has at least one channel for generating pulse vectors. A memory stores at least one type of dispersion pattern for each of the channels. A dispersion pattern is selectively extracted from the memory for each of the channels. A dispersed vector generator generates a dispersed vector for every channel by convolution calculation using the extracted dispersion pattern and the generated pulse vectors. An excitation vector generator generates an excitation vector from the dispersed vectors generated by the dispersion vector generator.